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(56) Documents Cited

GB 2146677 A

GB 1584611 A

EP 0599636 A1

US 4970504 A

US 4887445 A

US 4684945 A

US 4095239 A

(58) Field of Search

UK CL (Edition M) E2A ALBA ALP ALY, E2X X10 X5  
X7

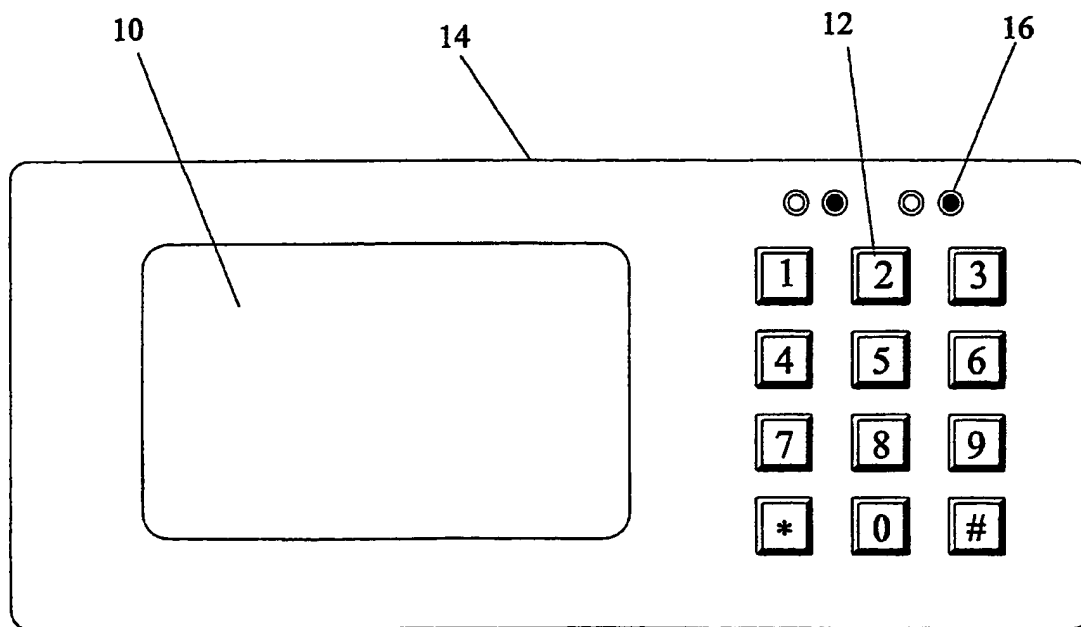
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(54) Building security system

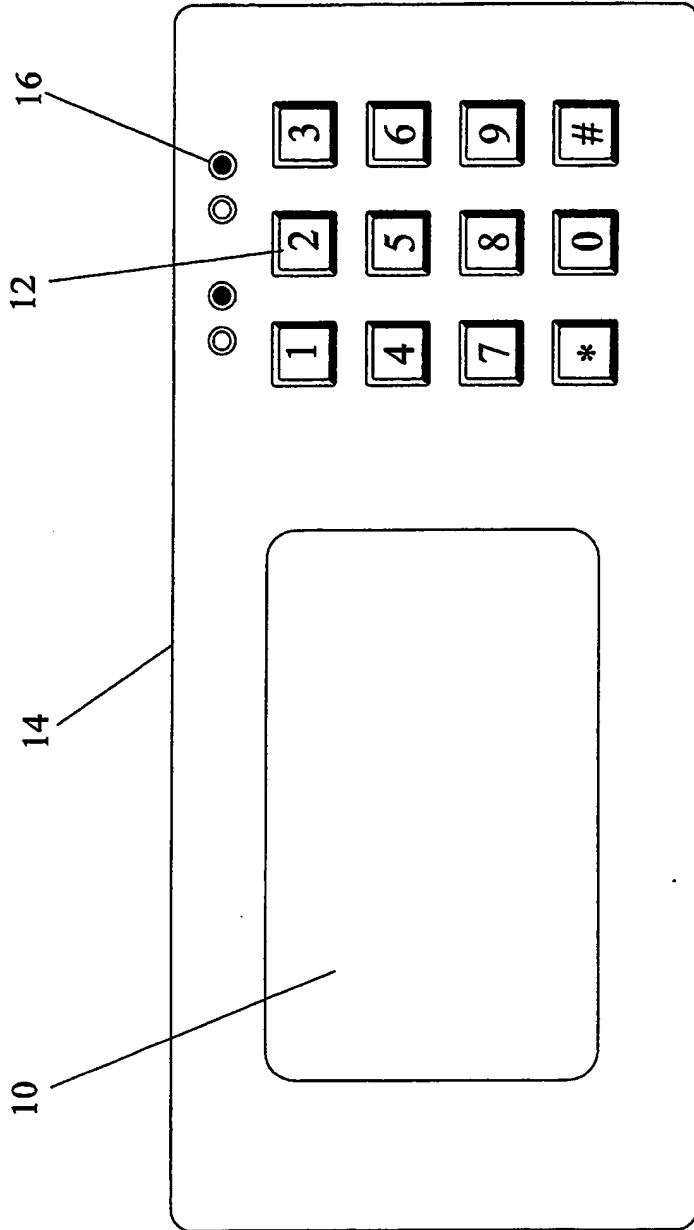
(57) A building security system is described that includes a code operated safe 14 accessible from outside the building and means for enabling the safe access code to be changed each time the safe is opened.

The safe will in use contain keys to the building and/or plans of the building and will allow quick access for the emergency services if a key holder cannot attend the premises rapidly.

The safe may be monitored by a central control unit which issues a warning should the safe be tampered with and which may be used to remotely reset the access code.



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## Building Security System

The present invention relates to a building security system.

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A problem is encountered with burglar alarm and fire alarm systems installed in a building on account of the fact that the emergency services, such as the police and the fire brigade, require a key holder to be present to allow them  
10 access to the building. Locating the key holder to obtain the key can cause serious delays and sometimes the emergency services are obliged to break into the building to investigate the cause of the alarm.

15 With a view to mitigating the foregoing disadvantage, the present invention provides a building security system that includes a code operated safe accessible from outside the building and means for enabling the safe access code to be changed each time the safe is opened.

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The safe can contain keys to access the building and may also contain plans or other important information about the building to assist the fire brigade. In this way, when the key holder is notified of the alarm by the police, the fire  
25 brigade or the company monitoring the security system, he need not attend at the premises immediately but can give the officers on site the safe access code to permit them to enter. Of course, this information would not be given directly to the officers, but the key holder would telephone  
30 a police station to give the information for passing on to the officers on the premises.

Once the safe access code is known, there is a risk that the code could be reused and, for this reason, the invention  
35 allows the code to be changed each time the safe is opened so that the same code will not operate twice.

The code change is preferably effected by using a remote communication link, but it is alternatively possible, in less expensive installations, for the safe itself to be manually reprogrammable or for it to be programmed to cycle  
5 through a predetermined sequence of stored or calculated codes each time the safe is opened.

It is common in security systems for the central control unit to include a remote communication link to allow any  
10 attempt at entry to be reported electronically to a central monitoring station. In the present invention, it is preferred to use the same communication link to allow resetting of the access code to the safe and to issue warnings not only of attempts at breaking into the building  
15 but also attempts to tamper with the safe. Such tampering could take the form either of a manual attempt to break into or to guess the code of the safe or electronic tampering or hacking such as an attempt to connect up to the system by telephone with a view to revealing or changing the safe  
20 access code.

The invention will now be described further, by way of example, with reference to the accompanying drawings, in which the single figure shows the front of a safe for use in  
25 a security system of the invention.

The safe 14 shown in the drawings is similar to currently available safes used in hotel bedrooms. The safe 14 has a door or flap 10, a key pad 12 and status LED's 16. When the  
30 correct number is entered on the keypad 12, the flap 10 can be opened. The safe is electrically connected to a control unit that monitors the entire security system, being connected to intrusion detectors, fire sensors etc.

35 Within the safe, a micro-processor or a dedicated electronic circuit compares the keyed-in code with a previously stored code and operates an electromagnetic release mechanism. The

code is changed or recalculated every time the door is opened so that the safe will not respond to the same access code.

- 5 The invention provides for the use of such a safe to allow access to a locked premises for the emergency services (and other selected personnel) eliminating the requirement for a key holder to be present. It also can contain a drawing of the building giving relevant information for the fire
- 10 services. This drawing could, for example, highlight the corridors and storage areas of flammable goods. The information would be set out specifically for the use of the fire or other emergency services.
- 15 The persons requiring access will contact a central station monitoring the premises for the access code number. This number once entered via the key pad 12 will open the flap 10. The interior of the safe 14 will then contain a key (or other form of access device) to the building and the alarm
- 20 system and may also contain a plan of the premises.

The invention offers the advantages of saving time for the emergency services because they would otherwise have to wait for a key holder to arrive. It saves money by avoiding

25 damaged caused by forced entry into the building by the emergency services and it can, in the event of a fire, save lives by passing essential information to the fire brigade.

The safe should be sited on the outside of the premises

30 close to the main entrance. This could be a gate or front door etc. The premises may not be manned 24 hours, but would have a monitored alarm system to detect break in and/or fire.

- 35 If an alarm is reported (fire, security etc), the central station monitoring the property will be notified automatically by the control unit of the system and will

contact the relevant service. The safe is used by this service when a key holder cannot reach the location within a selected time.

- 5 In this way, the invention will allow certain personnel to gain access into a locked property. Eliminating the requirement for these people to carry the keys to the property.
- 10 As the safe 14 is preferably be linked to the building security system the security company in charge can monitor the equipment for wrongful use or tampering.

Once the keys are replaced the enclosure can be locked again  
15 by closing the flap. To open the flap again, the central station must issue a new number.

The safe can be protected from wrong number entry and tamper (removal of the front cover or from the wall, and  
20 anti-drill) in known ways.

The security system can include, as is known per se, an internal power supply to that it may continue to operate during a power cut due. If that fails, the memory will stay  
25 intact and the safe will still remain secure:

The safe can be designed to provide outputs to inform security systems of the correct code being used, tamper alarm, wrong number attempt, and power supply status. It is  
30 also possible to program a code for use by an operative under duress. Such a duress code will allow the safe to open but will at the same time summon assistance from the police.

35 An internal indicator unit could be used to inform the property manager of power failure, tamper, correct code used, wrong number attempt, and to check the safe.

The safe can be operated from an external power source. The system could be turned on and off remotely by a central station (via a communicator). This would further reduce the risk of a wrongful code entry, e.g. the system would sleep until activated by the central station. Only at that time would the system accept a code.

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CLAIMS

1. A building security system including a code operated  
5 safe accessible from outside the building and means for  
enabling the safe access code to be changed each time the  
safe is opened.
2. A building security system as claimed in claim 1,  
10 wherein the means for enabling the safe access code to be  
changed comprises a remote communication link.
3. A building security system as claimed in claim 1,  
wherein the safe is programmed to cycle through a  
15 predetermined sequence of stored or calculated access codes  
each time the safe is opened.
4. A building security system as claimed in any preceding  
claim, wherein the safe is connected to a control unit of  
20 the building security system to allow tampering with the  
safe to be detected.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under Section 17**  
**(The Search report)**

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**Relevant Technical Fields**

(i) UK Cl (Ed.M) E2A (ALD, ALY, ALBA); E2X (X5, X7, X10)

(ii) Int Cl (Ed.5) E05B (49/00); E05G (1/00, 1/02, 1/024)

Search Examiner  
S J CHURCH

Date of completion of Search  
4 OCTOBER 1994

**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-  
1-4

**Categories of documents**

- |   |   |
|---|---|
| <b>X:</b> Document indicating lack of novelty or of inventive step.   | <b>P:</b> Document published on or after the declared priority date but before the filing date of the present application.        |
| <b>Y:</b> Document indicating lack of inventive step if combined with one or more other documents of the same category. | <b>E:</b> Patent document published on or after, but with priority date earlier than, the filing date of the present application. |
| <b>A:</b> Document indicating technological background and/or state of the art.   | <b>&amp;:</b> Member of the same patent family; corresponding document.   |

Category	Identity of document and relevant passages		Relevant to claim(s)
Y	GB 2146677 A	(LOCKMASTERS) - see page 3 lines 5 to 7 in particular	1-4
Y	GB 1584611 A	(BRISTOL SA) - see page 1 lines 70 to 76 and page 1 line 102 to page 2 line 3 in particular	1-4
Y	EP 0599636 A1	(MAS-HAMILTON) - whole document but see column 1 lines 7 to 36 in particular	1, 2 and 4
Y	US 4970504 A	(CHEN) - whole of document but see column 5 lines 61 to 66 in particular	1 and 3
Y	US 4887445 A	(BEATTY) - whole of document	1
Y	US 4684945 A	(SANDERFORD) - note the random access code generation in particular	1 and 3
Y	US 4095239 A	(GERRY) - note remote setting of access code and monitoring	1, 2 and 4

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).